

## Instrument Specifications

The SLED Toxicology Department is seeking to purchase an automated extraction system for extracting drugs and other compounds of interest from biological matrices such as whole blood, urine, and tissue homogenates. This system must include a minimum of the following System Requirements:

1. Automated modular solid phase extraction station for use with whole blood, urine, and other biological specimens.
2. Extraction station should utilize a multiple probe head cap capable of simultaneous extraction of up to 4 samples.
3. Extraction station must have a mechanism for minimizing carryover and contamination. It is desirable for the system to incorporate disposable tips for sample transfer.
4. Extraction station must accommodate a minimum of 48 SPE columns.
5. Extraction station should be capable of processing 3 or 6 mL SPE cartridges and 12 x 75mm collection tubes.
6. Extraction station must allow sample sizes ranging from 1 mL to 5 mLs.
7. Extraction station must provide for external bulk reagent dispensing in volumes from 0.5 mLs to 3 mLs.
8. Extraction station must be able to dispense the following reagents:
  - a. Water
  - b. Methanol
  - c. 0.1 M Phosphate buffer
  - d. 1.0 M Acetic Acid
  - e. Hexane
  - f. Hexane/Ethyl Acetate (50/50)
  - g. Methylene Chloride/Isopropanol/Ammonium Hydroxide (78/20/2)
  - h. Ethyl Acetate
  - i. 20% Acetonitrile in 0.1M Phosphate buffer
9. Extraction station must include liquid level sensing or pressure sensing capability at the extraction column at user defined intervals to detect column blockage and prevent over filling of column. The Extraction station must provide the user with error recovery options to include application of additional vacuum or positive pressure to extract the sample from clogged columns without drying out the other columns or removal of sample from batch.
10. Extraction station should be able to operate unattended. The analyst should not be required to add additional expendables/solvents to complete a batch process.
11. Extraction station must include computer and all software necessary for instrument control.
12. Extraction station should operate on 110 Volts 60 Hz line power.
13. Extraction station must include dedicated vacuum source if necessary for operation.
14. If positive pressure is employed for elution of solvents or sample from the SPE cartridge, the extraction station should have the capability to use a syringe pump and additional ancillary gas source for column pressurization.

15. Positive pressure systems should include all necessary control software, valves and regulators for operation of system.
16. On-site training on operation of hardware, software and programming for different extractions.
17. Batch processing time will be a consideration when evaluating system applicability.
18. Minimum of 2 year warranty on entire system.

Options

19. Ability to utilize additional SPE cartridge sizes and/or microplates is desirable. It is understood that this may require the purchase of additional racks designed to accommodate the expendable supplies mentioned above.
20. Ability to elute directly to 11 mm (1.8 mL) GC vials is desirable.